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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,180	04/04/2005	Go Nagaya		5597

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EXAMINER	
VANAMAN, FRANK BENNETT	

ART UNIT	PAPER NUMBER
3618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,180	NAGAYA, GO	
	Examiner	Art Unit	
	Frank Vanaman	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Status of Application

1. Applicant's amendment, filed Oct. 18, 2007, has been entered in the application. Claims 1-6 remain pending.

Claim Rejections - 35 USC § 112

2. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, line 5 (also note claim 6, line 6), "the steering direction" lacks a clear antecedent basis. This condition was caused by applicant's amendment to claim 1, line 3, which deleted "a steering direction" from the recitation.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 1, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (US 3,472,331) in view of Iizuka et al. (US 5,224,563). Baker et al. teach an arrangement for the driving of a steerable wheel (42) including a first knuckle (14) connected to a non-rotating vehicle portion and which supports, in a non-steered configuration, a drive assembly (12, 16) a second knuckle (19, 21, 82, 85) which is steerable, pivotally mounted with respect to the first knuckle about a king pin axis (Y), the arrangement additionally fitted with a braking arrangement (56, 58), wherein drive force is provided to the wheel hub through a mechanical arrangement including a flexible constant velocity joint (26) having a center (C) along the king pin axis (Y) and including two direct moving portions (e.g., 20 and 28) connected to one another by a pair of joint portions (orthogonal to one another) such that the axes of movement intersect at the center (C). The reference to Baker et al. fails to teach the drive source as comprising a motor. Iizuka et al. teach that it is well known to provide the steerable wheels of a vehicle (23, see top of figure 5) with drive motors. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a motor drive as taught by Iizuka et al. for driving the wheels of the vehicle taught by Baker et al.

with the non-moving portion of the motor connected to the non-steered portion of the vehicle frame (as also suggested by Iizuka et al.), for the purpose of reducing or eliminating emissions in city driving scenarios.

As regards the provision of a steering rod for rotating the steerable portions with respect to the non-steerable portions, in that (a) Baker et al. teach an arrangement for a steerable wheel and (b) it is very well known in the vehicle arts to connect a steering rod to a pivoting wheel support to allow the wheel to be steered, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a steering rod connected to the second knuckle portion in order to allow the wheel to be steered.

5. Claims 2-6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. in view of Iizuka et al. and Nelson (US 3,468,389). The references to Baker et al. and Iizuka et al are discussed above and fail to teach the connection of the motor to the non-steered knuckle portion by an elastic body or damper, and 'direct-moving guides' in vertical and horizontal directions. Nelson teaches an old and well known arrangement for mounting a motor in a vehicle drive arrangement, wherein a motor (12) is mounted to non-steered portions of a vehicle (e.g., 62, 67) with plural resilient bushing elements (44, 46) and direct moving guide portions (50) being separately oriented in horizontal (58) and vertical (52) orientations and being provided with further resilient buffer members (36, 36, 37, 37). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the mounting of the motor drive connected to the non-steered vehicle portions (and thus to the non-steered knuckle portion) of the vehicle of Baker et al. as modified by Iizuka et al. with the resilient and direct moving buffer and guide arrangement taught by Nelson, for the purpose of isolating the motor and frame so as to absorb torque reaction of the motor and cushion the motor from shocks and vibrations generated in the drive axle.

Response to Comments

6. Applicant's comments, filed with the amendment, have been carefully considered. As regards the reference to Baker not teaching the connection of the non-turning knuckle portion to a motor, the examiner agrees that Baker shows only a

connection of a non-turning knuckle portion to the remainder of the vehicle, including an un-illustrated drive. Iizuka et al., however do however teach that it is very well known to provide a motor associated with a non-steered portion (note the relative placement of Iizuka et al.'s motors, CV joints and steering linkage as illustrated in figures 5 and 6. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As regards the reference to Baker and the provision of a steering rod, the examiner agrees that Baker does not explicitly illustrate this element. Applicant is reminded, as was noted previously, the Baker's structure is explicitly steerable, and the use of a steering rod connected to a turnable knuckle portion is exceptionally old and notoriously well known (note, for example such teachings as presented in Iizuka et al. and Yamashita et al., both cited previously), as such, it is deemed obvious to provide an old and very commonly known arrangement to implement the steerability which is already conceptually anticipated by Baker.

Applicant refers to a "steel rod" at the second-to-last line of page 8 of the response, and the examiner notes that this is understood to be a typographical error, as no "steel rod" is recited in the claims. Applicant's comments that the motor cannot be involved in turning on a king pin axis, are noted. The drive supply taught by Baker, by dint of being connected to the steered wheel by CV joint portions (20-26; 26-28) also does not turn on a king pin axis, and similarly Iizuka et al.'s motors do not turn on a king pin axis or axes. As such, each reference additionally benefits from the same arrangement claimed by applicant.

As regards the further combination with the reference to Nelson, applicant asserts that there is no teaching of a direct moving guide and or buffer, being mounted in a horizontal or vertical direction. Applicant continues with the assertion, noting "nowhere does Nelson disclose the direction in which the motor is supported". This assertion is simply untrue. Nelson specifically discloses the directions of support at col.

3, line 75, col. 5, line 5 and col. 5, line 15-18. Applicant may desire to take some care in forming assertions which may be refuted or contradicted by an actual showing of the facts, as such assertions are misleading and serve to cloud prosecution of the application.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

As regards the provision of CV joints, these elements are found in both the references to Baker (20-26, 26-28, particularly in the illustrated orientation) and Iizuka et al. (proximate 26, again in the illustrated orientation). As regards the very broad recitation of connection absent any further limitation in claim 6, note that in the combined references, in an interpretation of similar breadth to the recitation itself, the rotary portion of the motor is connected to the motor case, which is mounted to the vehicle through the buffer and direct moving guides, which include a flexible coupling (e.g., the buffer portions), the connection to the wheel being made through the wheel bearing, knuckle elements and non-turning knuckle supports connected to the vehicle; the arrangement further having a "CV joint-like coupling" (e.g., Baker at 20-26, 26-28).

Conclusion

7. Applicant's amendment necessitated the new and/or modified ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618

12/31/07